

## Unit 3 Review

- Periodic Table:

- Rows  $\rightarrow$  Periods
- Columns  $\rightarrow$  Families, Groups
- Ways to characterize different parts of table

- Oxidation Numbers

- Related to number of valence  $e^-$
- Either gain or lose  $e^-$  to get full valence energy level
- Minimum: 0
- Maximum:  $\pm 4$

- Bonding:

- Ionic

- metal + non-metal
    - $e^-$  are TRANSFERRED
    - Naming  $\rightarrow$  see handouts

- Covalent

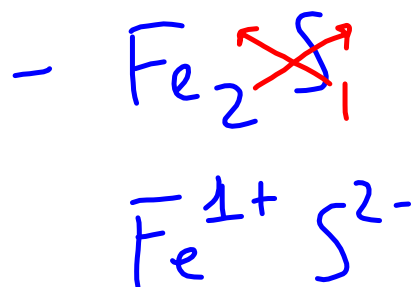
- two non-metals
    - $e^-$  are SHARED
    - naming  $\rightarrow$  see sheets
    - 7 diatomic molecules:

Br I N Cl H O F

- Metallic

- Metal (pure) or metal + metal
    - Free  $e^-$

• Examples:



1. ionic or covalent?

2. transition metal? YES

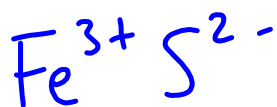
• Regular criss-cross  $\rightarrow$  shows how many atoms in the compound

- Drop signs; just use numbers

• Reverse criss-cross  $\rightarrow$  find oxidation numbers

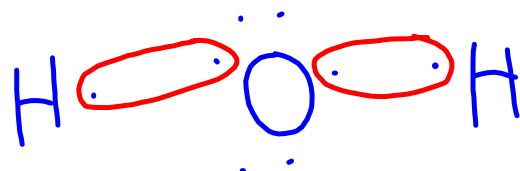
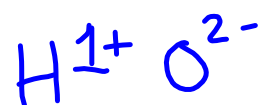
- Add signs  $\rightarrow$  + to metal, - to non-metal

Iron (I) Sulfide



Iron (III) Sulfide

-  $H_2O$  Dihydrogen monoxide



-  $F_2$

